

DOCUMENT RESUME

ED 333 219

CE 058 297

AUTHOR Williamson, John; Hassan, Isa
TITLE Curriculum Implementation: An Annotated Bibliography
(Second Edition).
INSTITUTION TAFE National Centre for Research and Development,
Ltd., Leabrook (Australia).
REPORT NO ISBN-0-86397-125-3; TD/TNC-24.05
PUB DATE 90
NOTE 67p.
AVAILABLE FROM TAFE National Centre for Research and Development,
252 Kensington Road, Leabrook, South Australia
5068.
PUB TYPE Reference Materials - Bibliographies (131)
EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Curriculum Development; *Curriculum Research; Early
Childhood Education; Elementary Secondary Education;
Foreign Countries; Postsecondary Education; *Program
Implementation; Research and Development; Research
Methodology; *Research Reports; *Theory Practice
Relationship; Vocational Education
IDENTIFIERS Australia

ABSTRACT

This annotated bibliography summarizes 70 studies of curriculum implementation, with emphasis on studies of curriculum projects in Australia. Most of the studies reviewed involve data gathering using the Stages of Concern questionnaire and the Levels of Use interview techniques developed by Gene Hall and his colleagues in the 1970s. The studies reported were conducted in early childhood, primary, secondary, and vocational schools. Each entry includes the following information: title, author, date, publisher, volume/page numbers where appropriate, and synopsis of the research. Depending on the document reviewed, more extensive findings and references may be included. The document is arranged in alphabetical order and is indexed. (KC)

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TAFE NATIONAL CENTRE FOR RESEARCH AND DEVELOPMENT

Curriculum Implementation: An Annotated Bibliography (Second Edition)

John Williamson
with
Isa Hassan

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CURRICULUM IMPLEMENTATION:

AN ANNOTATED BIBLIOGRAPHY

(Second Edition)

John Williamson with Isa Hassan

Adelaide 1990



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ISBN: 0 86397 125 3 (Hard Copy)
TD/TNC: 24.05

Published by:
TAFE National Centre for Research and Development Ltd
252 Kensington Road
Leabrook SA 5067
(Incorporated in South Australia)

Printed by A. Caudell, Government Printer, South Australia

CURRICULUM IMPLEMENTATION

PREFACE

This monograph is the second on curriculum implementation that has been commissioned by the National TAFE Centre for Research and Development. The first, which was co-authored with Kerry Kennedy and Catherine Patterson, drew attention to the fact that, at the time when the review ended in 1984, not only were there few Australian curriculum implementation studies but that there were almost no TAFE studies reported in the literature.

As with the first book, the focus of this volume was to be on Australian curriculum implementation studies. However, an extensive literature search and a direct approach to curriculum researchers in all education sectors in Australia has shown again that this is an area where relatively few studies have been conducted.

The conclusion that there have been relatively few Australian curriculum implementation studies is some-what surprising. At the national level, for example, the Curriculum Development Centre (CDC) was very active in working with the various States and Territories to develop curricula for Australian students. In addition, the CDC's several Directors and other senior officers were very active in promoting curriculum - in its broadest terms and applications - among educators and decision makers in all States and Territories.

Similarly, at the State Department/Ministry of Education level there has been a massive transformation of the typical curriculum in schools and TAFE. Generally, this has occurred because of a concern for the relevance of existing school and TAFE structures and curriculum.

The Commonwealth Government also has shared these concerns and provided significant sums of money to develop new TAFE curricula and curricula for special groups in the community (e.g., Transition education). Clearly, there has been a sustained and significant contribution to curriculum development and dissemination by these various system level authorities.

It is not appropriate for this volume to explore the reasons why there has been so little Australian research into curriculum implementation. Rather let me make some other comments. In the studies that have been reviewed in this monograph, several features are noticeable. Firstly, the very large majority of studies have involved the data gathering approaches developed by Gene Hall and his colleagues in the 1970s. That is, the Stages of Concern (SoC) questionnaire and

the Levels of Use (LoU) interview have been the methodology used by the researchers to grapple with the issues of implementation. After reviewing the studies, it is striking that there are almost no observational studies of classroom curriculum implementation given the enormous interest in this research approach during the 1970s and 1980s. Secondly, there are only one or two implementation studies which have been reported by Departments of Education or others who might be seen to operate at the 'system' rather than either the school or the classroom level. However, in these several cases it is possible to argue the focus of the studies is on policy development, and so more the concern of the 'system' level authority rather than on the practical issues of implementation, which might be of more concern at the school level.

The studies reported here have been conducted in the Early Childhood, Primary, Secondary and TAFE (including vocational education) sectors. The issues that arise in these implementation studies, it could be argued, show more similarities than differences. For example, in the Early Childhood or the TAFE sectors a common key issue is the amount of time allowed for the implementation of the innovation and for the training of the teachers involved in the implementation. Similarly, the concerns that teachers report as they implement a new curriculum appear to proceed through the same developmental phases. These are important messages, however, they tend to get overlooked by many of those concerned with curriculum development and implementation.

The preparation of this monograph has involved many people. I am grateful to the National TAFE Centre for Research and Development for their financial support. In addition, the Director and Deputy Director of the Centre deserve special mention as they have been very positive in their support for this project and they provided me with names of State authorities to contact regarding specific projects. The Faculty of Education, Curtin University of Technology, as always, fosters the climate to engage in tasks such as this. Isa Hassan worked long hours to identify and locate the articles which have been annotated and he proof-read the final manuscript. Special thanks are due to Phil Porter, Diane Youdell, and Dan Colgan who typed the material through its several drafts. Mr Colgan assisted greatly with the index.

John Williamson
Curtin University of Technology.

September 1990.

**Affiliation Of Arizona Indian Centres. (1984) PATHWAYS:
Implementation handbook, Office of Elementary and
Secondary Education, Washington, D.C.**

The Handbook was written for teachers and program directors of a Native American Indian adult education program in basic reading and writing skills.

The Handbook is divided into four sections and contains a number of considerations important to the implementation of the (PATHWAYS) curriculum. One section of the handbook focuses on issues such as the special needs and problems of the adult learner and individual learning styles. Another section contains a description of the components of the PATHWAYS curriculum and their use. Methods of diagnosis, placement and evaluation are recommended. Also included are suggested classroom management techniques, record keeping for students' placement and progress and suggestions for effective teaching in an adult education setting.

Arnot, M. & Whitty, G. (1982) From reproduction to transformation: Recent radical perspectives on the curriculum from the US. British Journal of Sociology of Education, Vol. 3(1) , 93-103.

This review essay is concerned with tracing the impact of new critical approaches to the study of curriculum in the USA and the UK. In doing so it highlights what the authors see as the limitations of traditional functionalist approaches.

In this discussion the material covered relates to the "hidden curriculum" of class culture and its impact on pupils in the school; the "curriculum-in-use" (i.e., the curriculum that is implemented).

The authors conclude that it is not appropriate for some authors (e.g., Lawton, 1980) to dismiss neo-Marxist perspectives on the curriculum as a worthwhile and legitimate approach.

Reference

Lawton, D. (1980) The Politics of the School Curriculum. London: Routledge & Kegan Paul.

Atkinson, E. (1986) A state-wide implementation programme to support government policy initiatives in education. A paper presented at the Annual Meeting of the American Educational Research Association, San Francisco.

In the early 1980s following the development of a plan for curriculum development in Victoria, Australia, a committee was established to create and carry out a strategy for implementing the newly developed policies.

The Curriculum Implementation Committee (CIC) was comprised of representatives from the Education Department, the State Board of Education and the Victorian Institute of Secondary Education. The CIC faced the problem of how to achieve awareness, acceptance and adoption of the broad principles of the curriculum development committee in a system of 2108 schools, over 500,000 students and almost 50,000 teachers within a context of local school responsibility for curriculum decisions.

The strategy developed comprised (i) distribution of a set of curriculum frameworks that local schools could use as bases for planning; (ii) distribution of a set of brief pamphlets and bibliographies on significant aspects of the ministerial plan; (iii) distribution of a set of papers on educational issues and strategies including access to education, individual differences, learning and learning styles, teaching strategies, curriculum negotiation and programme assessment; (iv) the creation of an information network and exchange and, (v) the encouragement of professional development.

A number of difficulties were identified in the implementation process, they include: the inevitable slow pace of the implementation process given the scope, the number of organisations and people involved and the commitment to collaborative decision making; the uncertainty among School Councils and teachers as to the status and degree of prescription of the curriculum "guidelines".

Baker, C. (1987) Printing applications short course: Evaluation report. Canberra, Australia: Canberra College of Technical and Further Education.

This project was concerned to evaluate a course in printing applications. A questionnaire was sent to the participants, teachers and supervisors (N=9) of the course and it focussed on course content, course conduct and objectives, adequacy of resources and suitability of timetabling arrangements. In addition structured interviews were held with the supervisors

(N=2) and the teachers (N=2) to flesh out the questionnaire data.

Findings

All involved in the course rated it as "successful" to "very successful". There was some concern that course content standards were too high in some areas and that on occasion the pace of presentation tended to be rushed. The equipment and resources available were considered adequate.

The majority of respondents made negative comments about the timetabling and course duration.

The supervisors saw the need for more on-the-job-training (OJT) so that the participants performed at an organisationally acceptable standard. The teachers supported this view but stressed the need for adequate work-place supervision.

There were three recommendations arising from the study which were made to the college: (i) to be more attentive to timetabling and content arrangements; (ii) to examine the need for two teachers and whether or not a tailor-made course is essential; and (iii) to focus attention on the role of the supervisor to maintain standards.

Berthold, J. (1982) The role of regional consultants in the development and implementation of curriculum in New South Wales. Educational Inquiry, Vol. 5(1/2), 30-37.

In this study the consultants were teachers who were withdrawn from classroom teaching to act as a resource for schools in each Region.

To ascertain the roles played by the consultants a mail survey was conducted. The questionnaire contained items relating to the part played by consultants in the various stages of curriculum development from conception to implementation, the teaching methods they used, their teaching experience, the problems they encountered in teaching, and the assistance they perceived they needed to be more effective.

Seventy-five consultants in the K-6 area were surveyed. Forty-eight usable questionnaire responses were received (26 from city regions and 22 from country regions).

Findings

Consultants were generally appointed to a limited term position of 2 to 3 years. They were mainly involved in

implementation and operational aspects rather than at the conceptual level.

Most consultants were contacted by individual teachers although over 77 per cent reported that they were frequently contacted by school principals.

The consultants were very critical of the amount of time allocated to curriculum development in their respective subject fields in teacher education institutions.

Finally, they reported that too much was expected of Infants/Primary teachers in each subject in relation to curriculum development.

California Association for the Gifted. (1980) Implementation of programs for the gifted/talented: A workbook for educators and parents. Canoga Park, CA: California Association for the Gifted.

The Workbook was produced in response to recent Californian legislation. The legislation, California Education Code 1040, sets out to support the special needs of gifted and talented pupils from economically disadvantaged and varying cultural backgrounds.

The Workbook is written for educators and parents and contains specific guidelines to assist in the development or expansion of programs for gifted and talented students.

The Workbook lists a set of criteria, with suggested items within each category, for the effective implementation of gifted talented programs. These criteria are grouped into the categories of: identification, program, curriculum, staff development, parents involvement and evaluation.

The Workbook includes a development flow chart which stresses the gathering of data, decision making, and program implementation; a checklist for applying the criteria to program implementation; and sample implementation worksheets for each category.

Carter, D. & Hacker, R. (1988) A study of the efficacy of a centre-periphery curriculum implementation strategy. Journal of Curriculum Studies, Vol. 20(6), 549-552.

This project is concerned with the implementation of a new K-Year 10 Social Studies curriculum and whether or not the use of the package reflected the intentions of the curriculum developers.

In the new curriculum more emphasis was to be placed on students' understanding of underlying concepts and ideas, the acquisition of higher order skills of interpretation and inference and less on the acquisition of factual information. The students were also to apply values to dilemma situations and controversial issues.

An observation instrument, the Social Studies Lesson Observation Schedule (Carter, 1982) was used to collect data from teacher/class units randomly selected from senior high schools in metropolitan Perth. Over the three-year study there was a substantial attrition rate due to staff movement through schools, etc. Data were collected from the classes of 14 teachers who used the "old" curriculum (in the first year of study) and the same 14 teachers who used the "new" curriculum in the third year of the study. Each class was observed for eight lessons. All classes observed were co-educational, mixed-ability and the pupils were aged 14 or 15 years.

There were intensive training courses for observers and inter-observer and intra-observer reliabilities of 0.91 and 0.92, respectively, were achieved.

The findings suggest significant changes in classroom practices with the new curriculum. However, the changes were not consonant with the intentions of the new curriculum. The main changes were an increase in lower order intellectual demands (e.g., recalling facts) and decreases in high order demands (e.g., interpreting observations). There were also decreases in student initiated behaviours. The authors say that "[the changes] that did occur were antithetical to the intentions of the package developers".

In conclusion the authors suggest two possible reasons for these results. Firstly, there was no inservice training course for the teachers of the "new" curriculum. Secondly, that any change in curriculum from familiar to unfamiliar will lead to a more teacher-centred approach.

Reference

Carter, D.S.G. (1982) The Social Studies Lesson Observation Schedule. Perth: The University of Western Australia, Department of Education.

Carter, D.S.G. (1986) Examining the implementation of a curriculum innovation: A centre-periphery example. Curriculum Perspectives, Vol. 6(1), 1-6.

This paper reports a study conducted in Western Australia on the implementation of a new K-Year 10 social studies syllabus.

The new syllabus was developed by the State Education Department and distributed to primary and secondary schools. The author asserts that this centre-periphery approach to syllabus renewal is typical of a hierarchical system such as the Western Australian Education Department.

Carter traces the development of the 'new social studies' but says that little has changed in what actually occurs in social studies classrooms. For example, a study following the introduction of the Social Education Materials Project (SEMP) reported that the impact and 'take-up' of these materials was minimal (Marsh and Carter, 1980).

Data were collected from 13 teachers in State Government schools in the metropolitan area of Perth. All teachers in the study had more than two years teaching experience and were qualified to teach social studies as well as separate subjects in cognate disciplines, e.g., history, geography, economics and politics. Each teacher completed a Stages of Concern Questionnaire (SOCQ) and underwent a "Levels of Use" (LOU) interview (Hall et al., 1979; Newlove and Hall, 1975).

Results

The author reports that all teachers were familiar with the new syllabus and that within an "authority-decision structure" the Levels of Use suggested a reasonable degree of adoption. He cautions, however, that these may be ephemeral rather than deep-seated changes as there is no data on 'how' it is being used or how it has changed the learning environment or teaching process.

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Cavanagh, G. & Styles, K. (1983) The implementation of new curriculum guidelines and policies. Education Canada, Vol.23 (1), 9-15.

The authors assert that one of the greatest problems in the implementation of new curriculum guidelines is to convince teachers and administrators that they need to change.

The article lists twenty typical objections that are voiced when new policies mandate changes in classroom practices or school procedures. The authors comment on these and suggest ways of overcoming them. An example of such an objection and comment is:

Objection: I've been teaching for 20 years. What makes you think you've got something better to offer me?
Comment: The trap of experience is the belief that everything one needs to learn has already been learned. Openness of mind to new possibilities can lead to productive and creative variations on the "old themes" of traditionally sound practices.

The authors offer a practical implementation model that recognizes the importance of people (in terms of their beliefs, attitudes, decisions and actions); policies and curricula (in terms of objectives, strategies, resources, evaluation practices and timelines); and potential activities. A list of twenty potential activities involved in the implementation process is provided in the article.

Centre for Educational Field Studies. (1970) An evaluation of a project for the analysis, development, implementation, and diffusion of the new social studies curricula. Centre for Educational Field Studies, Washington University, St. Louis.

The Social Studies Implementation Project involved 23 school districts in metropolitan St. Louis in the use of a new social studies curriculum. The project set out to develop an approach that would overcome the problems associated with curriculum implementation. The steps include:

- i) the establishment of four field stations;
- ii) a three year four stage implementation of the process in each field station, involving analysis and selection of curriculum, testing new materials in field stations schools, and diffusion to other schools;

- iii) training a group of teachers to use and adopt the implementation process;
- iv) initiating change by placing personnel in key roles and encouraging adoption; and
- v) disseminating the curricula.

A six phase evaluation, using both formative and summative information, was developed for the project.

Data were gathered from various sources; field observer notes, unit progress reports, data from participants, and third-party reports.

The report lists some positive outcomes in the use of the approach in such areas as acceptance of the model, the development of analytical skills, and the dissemination of the materials.

Chant, J. (1987) Report on the implementation of CN B25 access course for women, 1986. Brisbane, Queensland: Division of TAFE Operations Branch.

In 1986, 72 trade based courses for women were offered by TAFE in eight different locations in Queensland, including Brisbane. The CN B25 Access course for Women was designed for those who would like to gain experience in technical and trade areas in addition to communication and self confidence.

The aims of this report were fourfold:

- i) to evaluate the strategies used in the implementation of the course;
- ii) to identify student and teacher perceptions of the strengths and weaknesses of the course;
- iii) to ascertain the worth to women of a preparatory trade based course; and
- iv) to provide a reference for those making decisions on the implementation of future offerings of this course.

The implementation strategies used included a staff development seminar; a publicity campaign; college-based staff development and action plans, and, student support.

The study obtained information from administrators, teachers, students and employers through the use of interviews, questionnaires, discussions and teleconferences.

The report listed 14 specific recommendations for the improvement the implementation process. For example, developing a comprehensive staff development programme; holding regular meetings to discuss issues and problems; more consideration given to assessment, etc.

Coley. T. (1980) The implementation of planned educational change: A theoretical discussion. Research and Development Centre for Individualised Schooling, Wisconsin University, Madison.

The paper, a report from the Project on Studies of Implementation of Individualised Schooling, reviews the literature to provide a theoretical basis for understanding the relationship between external decisions and the implementation of an innovation.

Two major conclusions relating to external agency decisions and the implementation of educational change are reported:

- i) the implementers of change are likely to view externally initiated change with apprehension and resistance because of value preferences and "sunk" costs of the existing practices and structure of the organisation, and
- ii) when external agencies initiate change, the focus is on managerial control in order to ensure implementers meet the intent and objectives of the change.

A number of strategies which assist the implementers to adopt the innovation and comply with the objectives of the new policy or program (e.g., T-groups, inservice sensitivity training) are discussed.

The study also reported that the degree of educational change was a function of the manager's ability to overcome staff resistance to change. Dependence on outside resources was another critical factor in implementation; that is, compliance by an organisation with external decisions was related to the degree of dependency on outside resources by the agency adopting the policy. Manoeuvres among members within the organisation to actualise their own personal and organisational goals were also seen to affect the implementation process.

Common, D. (1981) Two decades of curriculum innovation and so little change. Education Canada, Vol.21 (3), 42-47.

The article attempts: (i) to answer the question of why so many curriculum innovations fail, and (ii) discusses some of the factors that influence how a new curriculum is successfully put into practice.

The author identifies five characteristics of a curriculum that directly affects the implementation process within a school. These include:

- i) the degree of change from the status quo. The more radical or extreme the curriculum, the more the resistance to the changes. Examples of such changes range from the simple substitution of materials, through the more extreme shifts in value orientations;
- ii) the complexity of the curriculum. A complex curriculum that requires major changes in current practices is unlikely to be used;
- iii) the degree of practicality of a curriculum. Users of the curriculum need to feel that the curriculum meets their immediate teaching needs for it to be implemented;
- iv) the new curriculum must compare favourably with existing curricula. Unless the user is convinced that the new curriculum will make their classroom or school a better place, it will not be implemented.

Two additional factors, that of the teacher and administrator, also are discussed as having an influence on the implementation process. In the case of the former, the teacher's personality, comprehension and willingness to participate need to be considered. The administrator's leadership and involvement are important in the success or otherwise of the introduction of a new curriculum. Finally, the intellectual and emotional experiences and needs of the teachers and administrators need to be met.

Connolly, S. (1988) Integrating evaluation, design and implementation. Training and Development Journal, Vol. 42(2), February, 20-23.

The author argues that if the quality of training is to improve, then training evaluation should be closely linked to the processes of design and implementation.

Four points are identified where trainers can link evaluation to curriculum design: development testing; postpilot assessments; posttraining evaluation; and follow-up evaluation.

In development testing the various pieces of the programme are tried independently or in sequence to see how well they work before being used in the classroom. The postpilot assessments involve gathering data from programme participants, instructors, curriculum designers and subject matter experts. The posttraining evaluation phase involves looking at the product's effectiveness. The final phase, follow-up evaluation, seeks to answer questions such as whether or not the participants are using their learning on the job? Does the learning make any difference?

The author asserts that trainers measuring on-the-job skill application should move beyond merely establishing the degree to which the trainees apply the learning to identify the environmental factors that contribute to or interfere with application.

Corbett, H.D. & Rossman, G. (1986) Fanfare and failure: Pathways to implementing change. A paper presented at the Annual Meeting of the American Educational Research Association, San Francisco.

In this paper the authors argue that those concerned with implementation need to be aware of the technical, political or cultural dimensions (House, 1981) of all studies.

The paper reports data from two studies. The first involved 14 schools undergoing curriculum changes in basic skills, career education and citizen education. The second study involved three "good" high schools as they strived to become better.

The first study involved external field agents and local planning teams (e.g., administrators, teachers). It was conducted over three years and involved observation, open-ended interviews and some surveys. The second study lasted for one year and used intensive qualitative field work (an average of 50 days on each site).

The first study is described as highlighting technical and political processes. Whereas the second study adopted a more "cultural" perspective. The technical stream applied to three sets of individuals in a school; planning team members, teachers in tight sub units where at least one member was a member of the planning team, and teachers who were involved because decision makers had decreed changes would be made.

The cultural stream is related to the tacit, murky aspects of an organisation's life (e.g., norms, beliefs), it is "the way things are done around here". Typically the cultural path was prompted by a negative "judgement of fit" and this led to a redefinition of norms related to work, roles and relationships. The authors refer to the difficulties in questioning "sacred norms" and that there was an inverse relationship between the adherence to sacred norms and agreeing to new norms.

The authors report there were also pressures from the community to maintain congruence between the current and the new norm. If these drifted too far apart it introduced a new level of complexity and additional pressures.

The authors state that the three streams (i.e., technical, political, cultural) in this study are interconnected. In the schools where most staff implementation was evident then the three streams were utilised. In schools where change was forced staff moved away from the school or opted into the "technical" and or "cultural streams".

In conclusion, the authors state that certain antecedent conditions set the stage for how well or poorly an innovation will proceed. For example, establishing procedures and schedules that allow frequent staff interaction is not only useful in itself but provides the "slack time" necessary for innovation to occur and avoids costs associated with replacement teachers, etc. Second, that encouragement/assistance and altering rules and procedures to accommodate change are essential.

Reference

House, E.R. (1981) Three prospectives in innovation. In R. Lehwing and M. Kane (Eds.) Improving Schools: Using what we know. Beverley Hills, Calif.: Sage.

Darr, A. (1985) Factors affecting the implementation of a new curriculum by classroom teachers. A paper presented at the Annual Meeting of the Midwestern Educational Research Association, Chicago.

This paper reports the results of the first year of a three-year longitudinal study of the implementation of a new Home Economics curriculum in Ohio.

The purpose of the study was to investigate: the teachers' Stages of Concern about adopting the curriculum, the factors that affected the teachers' adoption of several units within the curriculum, and the relationship between these two aspects.

There were 1082 home economics teachers were involved in the study. The teachers were almost evenly divided between teaching in urban areas and country areas. Almost 70 per cent of the teachers had Bachelor degrees, one per cent had doctorates and the remainder had Masters degrees. Forty-six per cent of the teachers had 10 years or less teaching experience.

A 53 item questionnaire was distributed to the teachers in 1984. The first 35 items comprised the Stages of Concern question-naire (SoC) and the remainder asked for information about educational level, experience, attendance at inservice sessions, participation in the curriculum development and use of the curriculum.

Results

The majority of teachers (70 per cent) had not used any of the new modules. Therefore, the teachers' scores on the SOC questionnaire show them to be typical Non-users of a new innovation. That is, they scored high on concerns at the Information, Personal and Consequence levels. There were low concern scores at the Management, Collaboration and Refocusing levels.

When the curriculum was used the degree of adoption was related to attendance at inservice sessions. However the author reports that it was the optional sessions rather than the compulsory inservice sessions that made the important difference. The years of teaching experience and amount of education of the teacher were not related to curriculum use.

Davis, M. (1988) The evaluation of a school/TAFE programme in child care. Canberra, Australia: ACT Institute of Technical and Further Education.

This report is concerned with the introduction of a Year II Child Care course in the Australian Capital Territory (ACT) school sector by the Canberra TAFE College.

The study comprised both formative and summative evaluations of participants enrolled in the Certificate in Child Care Practices.

The evaluation was intended "to examine the School/TAFE Programme from the students' perspectives, centring on what they perceived to be their future educational and vocational paths subsequent to completion of their participation in the two year programme and secondary schooling."

Data reported in the evaluation included:

- i) participants understanding of the concept of "child care" and its "occupational destinations";
- ii) participants' profile, i.e., family background, subjects studied, future career etc.;
- iii) "satisfaction" with the programme, i.e., content, "treatment as adults", etc.

A total of three questionnaires were sent to the students enrolled in the course. The questionnaires contained three sections: (i) biographical information from the students; (ii) student responses to the operation of the course, and (iii) an open-ended section which asked about the best and worst features of the course.

Dow, I. et al. (1984) Curriculum implementation: A framework for action. Ontario Public School Teachers' Federation, Toronto, Canada.

This paper is a sequel to the 1981 study "New Perspectives On Curriculum Implementation". The study was designed to ensure that curriculum planners have ready access to concrete planning strategies for effective curriculum implementation at the local level.

One section of the paper outlines what the literature says on the complexity and problems of curriculum development from the perspectives of the users and organizations. Major elements of the curriculum implementation process and a number of potential barriers to implementation associated with these elements are identified.

Three separate questionnaires were developed in the study: Barriers to Implementation Questionnaire (BIQ-A) for teachers' responses, Barriers to Implementation Questionnaire (BIQ-B) for principals' responses and Barriers to Implementation Questionnaire (BIQ-C) for consultants/coordinators' responses.

1,000 questionnaires were sent out in the study (300 to principals, 600 to teachers and 100 to consultants/coordinators). 65% of the questionnaires were returned by the principals surveyed. The response rates for teachers and coordinators were 38% and 44% respectively.

Data concerning teachers', principals' and consultants/coordinators' opinions about curriculum implementation problems were summarised and a list of 20 specific recommendations made.

The paper analyses five major barriers to curriculum implementation; namely: communication; role clarification; time; resource support and information acquisition; and provides suggestions for overcoming them.

Durzo, J.H. (1978) The organisation and implementation of instructional development programmes in higher education: A review of literature. In R.K. Bass & D.B. Lumsden (Eds.), Instructional development: The state of the art, Vol. 1. (pp. 111-140). Columbus Ohio: Collegate Press.

This literature review covers the following 8 topics: (i) the nature of instructional development; (ii) the instructional development movement; (iii) the role of instructional development agencies; (iv) characteristics of instructional development agencies; (v) approaches to instructional development; (vi) the scope of instructional development projects; (vii) project generation and selection, and (viii) implications for implementing instructional development programmes.

For example, in topic (i), the Nature of Instructional Development, the author highlights the relatively short history of "instructional development" and quotes Engel (1969), Schauer (1971), Gustafson (1971), Twelker, Urbach and Buck (1972), and Gaff (1975) to give a feel for the breadth of the area.

In topic (viii), Implications for Implementing Instructional Development Programmes, the author considers the following key issues: Administrative commitment; administrative location of instructional development agencies; institutional reward structure; instructional development procedures; a team approach to institutional development; faculty development; maximising impact and, evaluation.

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Schauer, C. A Vice-President looks at instructional developments. Audiovisual Instruction, Vol. 16(10, 43-45.

Twelker, P., Urbach, F. & Buck, J. (1972) The systematic development of instruction: An overview and basic guide to the literature. Stanford, Calif: ERIC Clearinghouse on Media and Technology.

Edwards, P. & Skamp, K. (1981) The Investigating: Science (K-6) Curriculum Policy - Issues associated with its development, dissemination and implementation. Leader, No. 2, 52-62.

This article is concerned with the development, dissemination and implementation of a statewide K-6 science curriculum in the early 1980s in New South Wales.

The authors discuss the particular attention paid to the development of supportive material (i.e., both 'people management' and 'material support'); the 'barriers to change' (including the teachers' lack of clarity about the new role they would have to assume, the teachers' lack of skills and knowledge to carry out the new role, etc.); how the K-6 policy was formulated (to highlight the close collaboration between the client and the 'change agent'); facilitating factors (including readily obtainable information about the curriculum support for the new curriculum from the employer, etc.).

The authors suggest that external factors (e.g., promotions) be contingent upon demonstrated evidence of involvement in the new curriculum to guarantee implementation.

Eylon, B.S., et al. (1984) The Agam Project: A research and curriculum development program in visual education. Progress report No.2. Weizman Institute of Science, Rehovot, Israel.

The Agam Method of Visual Education for preschool children curriculum units was translated from the original French curriculum and involved no major changes in program content. Program implementation, which commenced in December 1983, was continued during the 1983-85 school years at four preschools. It was later expanded to include implementation in a first grade class twice a week.

The teachers involved in the implementation were trained in the use of the curriculum. In addition to the inservice

training these teachers were involved in monthly meetings with the project staff. Classroom observations of the lessons and feedback to the teachers were also utilised. A teacher's manual and video-tape was produced as part of the implementation package.

One of the findings was that effective implementation must be accompanied by a considerable amount of teacher inservice training.

Fessler, R. (1980) Moving from needs assessment to implementation: Strategies for planning and staff development. Educational Technology, Vol. 20(6), June, 31-35.

The author asserts that there has been considerable documentation of system or school "needs", or gaps between what "is" happening and what "ought" to be happening. An area overlooked, however, is a systematic linkage between the identification of needs and implementation of the desirable changes.

The article is concerned to show how needs and implementation can be linked. Three strategies are suggested: (i) to prioritise needs through criteria analysis; (ii) to develop a cyclical implementation/staff inservice programme; (iii) to use an analytical problem-solving approach to curriculum and decision-making.

Strategy 1, involves the use of a grid analysis system. On one axis of the grid, potential criteria for prioritising needs are listed while the other axis shows the "needs" identified in the needs assessment survey. Strategy 2, builds on the needs identified in Strategy 1. A plan is developed to introduce the various phases of the implementation and inservice programme over a specified time span. Strategy 3, is designed to assist staff in assessing alternative choices in the curricula, and materials selection process. A grid is used in which the vertical axis shows specific alternative ways to meet the need and the horizontal axis contains some suggested criterion measures to consider in the decision-making process. The task for educational planners would be to weigh each alternative against each criterion measure.

Fullan, M., et al. (1986) Support systems for implementing curriculum in school boards. Ontario Institute for Studies in Education, Toronto.

The study involved four school boards (3 public and 1 separate) in Ontario, Canada. The project examined the models, policies, procedures and practices used by the boards to stimulate, support, coordinate and assess the effectiveness of curriculum changes in the classroom and schools within their jurisdiction.

Each of the school boards had a student population of between 17,000 and 46,000 students.

Data gathering approaches in the study included: (i) document analysis (organizational charts, implementation models, job descriptions); (ii) interviews with central and area superintendents and curriculum consultants; (iii) questionnaires to consultants; and (iv) interviews with principals and teachers. 32 supervising officers, 37 consultants, 16 principals and 32 teachers were interviewed. Questionnaires were completed by 59 consultants.

The report provides detailed descriptions of the four models used by the boards, an examination of the models as practised, the identification of factors facilitating and inhibiting implementation of the models, an examination of a specific curriculum innovation selected by each board and an assessment of the effectiveness and outcomes of the models.

The conclusion outlines a number of concerns and recommendations for developing more effective models, practices, and procedures for planning and implementing curriculum improvement.

Gardner, J. (1989) National study: TAFE advanced English program for migrants. Sydney: Department of Technical and Further Education. Surveys and Evaluative Studies Division.

One of the issues explored by this study was the implementation of the Advanced English Program for Migrants (AEPM) in six states and the Northern Territory.

The study provides a national overview of the AEPM programme since its introduction in 1983.

Data on the implementation of the programme by the states were obtained from information collected on programme strategies adopted by the states. Also included were: current objectives of the AEPM in each state and consistency of objectives at the local, state and national level; and interpretation of

guidelines by the states and consistency of use of the guidelines at local, states and national level.

One of the conclusions reached by the study was that the states had adopted different strategies in implementing the programme depending on their local context; some had incorporated the programme within overall TAFE provision while in others the programme remain more marginalised.

A list of recommendations are provided. These include: funding for the programme be on a triennial basis for more effective planning; that the objectives for the programme be related to programme outcomes to give greater definition to the programme; that each state consider the effectiveness and efficiency of their programme within the state context and to use the Outcome Hierarchy as a means of doing this; that there be more formal contacts between state coordinators to deal with policy issues and rationalisation of curriculum and materials development.

Gaynor, A. & Clausett, K. (1984) Improving school effectiveness: The dynamics of implementation. A paper presented at the Annual Meeting of the American Educational Research Association, New Orleans.

This paper deals with the dynamics of implementing school improvement programmes. It is based on an analysis of the literature on effective teaching, effective schooling and social change. This information is used to build computer simulation policy models.

The authors have developed the School Improvement Policy Implementation Model, which they describe as a causal model that provides a theoretical framework for examining key issues on implementation.

The model contains six figures that illustrate the difficulties of implementing school improvement policies in such areas as teacher expectations and student behaviour. These figures cover such topics as the basic dynamics of school improvement; teacher and principal actions to improve achievement; influences on teacher motivations; influences on the principal's effectiveness; factors that influence the principal involved with school improvement; and the dynamics of securing external resources.

The figures highlight the complexity of unwanted and unintended side effects that need to be neutralised or reduced when major improvement projects are undertaken by the school.

Grove, G. & Kinderis, E. (1980) An inservice model: Planning and implementing multicultural curricula. Polycom, August, No. 25, 20-23.

This paper reports an inservice education initiative which is modelled on the Ethnic Cultural Centre in Minnesota. There are four basic categories in the Planning and Implementing Multicultural Curricula model: (i) Ethnic awareness; (ii) Sociology of migration; (iii) Evaluation of school and materials; (iv) Lesson planning.

The four categories were presented over a timetable of eight sessions. The sessions have been used as the basis for whole school staff meetings, as block staff development meetings or as the basis for an in-service programme for a number of schools in a particular area.

In the final session the participants prepared their own multicultural lessons on the basis of a prescribed lesson planning model.

Hall, G., Hord, S. & Griffin, T. (1980) Implementation at the school building level: The development and analysis of nine mini-case studies. A paper presented at the Annual Meeting of the American Educational Research Association, Boston.

This paper reports a project that involved 9 school sites studied over three years. The researchers used the Concerns Based Adoption Model (CBAM) instruments - the Stages of Concern (SoC) questionnaire and the Levels of Use (LoU) interview. The data collected were developed as a series of 9 mini-cases.

A number of tentative hypotheses were generated about the various data. For example, in schools characterised by level SoC: Management it was suggested, (i) resolution of Management concerns does not simply occur with extended experience with the innovation; (ii) teachers with high SoC: Management concerns combined with high SoC: Personal concerns may not be open to visits by innovation consultants, even though the intention is to provide "how-to-do-it" (i.e., SoC: Management) assistance.

The authors report their data showed that Principals functioned differently in different kinds of schools. For example, in schools described as "Management Concerned" schools the Principal did not get involved with teachers and the use of the science innovation. The Principals in the two

"Impact Concerned" schools, by comparison, were "science activists".

Data from the Principals lead the authors to suggest a number of tentative hypotheses; for example, (i) Principals have Stages of Concern about their roles as change facilitators, and that these steps can be described in the same way as the Stages of Concern that teachers have about innovations; (ii) the interventions that Principals use (i.e., their change facilitating style) will vary with their own Stages of Concern.

The paper concludes by suggesting that no matter what the Principal's change facilitating approach there are direct but differential effects on the teacher's concerns and classroom practice.

Hall, W.C. (1988) TAFE industry partnership: Towards more effective relationships in course development and implementation. A discussion paper. Adelaide: TAFE National Centre for Research and Development.

The study was undertaken to examine the existing partnerships between Technical and Further Education (TAFE) and industry and possible alternatives, or additional mechanisms and structures, for co-operating on course development and implementation.

The nine-month investigation included: a study of the use of joint facilities in five states (Western Australia, South Australia, Victoria, New South Wales and Queensland); a study of training models used in industry; and an examination of ways of integrating on- and off-the-job training within traineeships. Issues which were considered include questions of liaison, curriculum management and development, and the role of the federal government.

Information was gathered from interviews and from a questionnaire sent to industrial groups, TAFE staff, training organisations, national Industrial Training Centres (ITCs), state training authorities, government departments, and various Trades and Labour Councils. In addition, the literature relating to the overseas experiences (USA, UK and several other OECD countries) was also studied.

Twelve different approaches to strengthening education/industry links were examined (including PICKUP, Professional Industrial and Commercial Updating; LENS, Local Employer Network, and the New Job Training Scheme).

The study found the TAFE/industry partnerships to be very patchy. While excellent examples of effective relationships

in TAFE course development were found, the number of positive examples were not nearly so widespread in the area of TAFE course implementation.

Three recommendations on improving TAFE/industry partnerships were proposed:

- i) a tripartite (TAFE/industry/training) policy making body should be formed at state level,
- ii) TAFE should be requested to develop and implement training programmes for industry,
- iii) industry should be requested to provide modern equipment used for training.

Hall, W.C. (1988) Teaching the social implications of technological change. Adelaide: TAFE National Centre for Research and Development.

The report discusses three issues relating to the teaching of social implications of technological change within TAFE courses. These issues are:

- i) the meaning of the social implications of technological change and why it is important to teach them in TAFE courses;
- ii) examples of how social implications may be taught (examples from TAFE colleges are included); and
- iii) suggestions for a curriculum framework.

A questionnaire was sent to 245 TAFE colleges seeking examples of social implications of technological change which were taught in their respective colleges. Only 11 colleges indicated that they had a course which included material relevant to the project. Six colleges eventually provided detailed materials. This was followed up with a case study of two large colleges.

Further information was gathered from a content analysis of 14 of the most recent national common core curricula documents. Only five included material relevant to the aims of the implications of technological change project.

The author provides a curriculum framework useful to curriculum planners when including the social implications of technological change in their courses. Several models are described in the publication.

Hallivell, G. (1984) Implementing the curriculum in an Early Education Class (EEC). Links, No. 6, 4-8.

This article concerns the study of social processes involved in the implementation of early education classes in small rural schools in Queensland.

The author cites Sarason (1971) on the need to understand the cultural context in which the curriculum is implemented. She asserts that implementing the curriculum is a cultural process in which people, each with their own interests and goals, negotiate what is to happen in the classroom and the meanings to be given to these activities.

The article provides several examples of children as "negotiators". These show how children resist or ignore some aspects of the curriculum or respond enthusiastically to other aspects.

The role of the principal as the person responsible for the overall school curriculum is outlined.

In a section on "teachers as negotiators" the author asserts that those teachers who had developed some skill in bargaining, adjusting and collaborating tended to feel more in control of the classroom curriculum.

The article traces some of the links between structures in society and curriculum practices in schools. For example, the author concludes that the teachers observed tend to rate children in a narrow range of academic skills and to sort them into groups on the basis of this. The author also refers to the ideological debate over the definition of curriculum activities at the school level as "play" or "work".

The author concludes by asserting that teachers need to recognise that social processes influence all aspects of the curriculum.

Reference

Sarason, S.B. (1971) The culture of the school and the problem of change. Boston: Allyn and Bacon.

Hill, J. (1988) How to be responsive to stakeholders in curriculum studies. NASSP Bulletin, Vol.72 (509), 8-13.

This article attempts to answer the question of how principals can ensure that teachers and others interested in curriculum development are focussing on the needs of students. The author suggests a question matrix showing the holistic relationship in the planning, implementation and outcome processes, and the five interrelated program components of curriculum design, instructional means, resources, staff development and learner experience be developed. This is described as the Curriculum Domain wheel.

The Question Analysis Matrix pertaining specifically to the process of implementation in the five domains are:

- i) design - i.e., what priority is placed on this skill as a goal by society, teachers, employers?
- ii) instructional means - i.e., what sequence of material would facilitate meaning?
- iii) resource - i.e., what selection criteria should be applied to identify the best materials, etc?
- iv) staff - i.e., is the inservice given consistent with what the instructor will have to do in the actual classroom?
- v) learner - i.e., what personal experiences and attitudes do the students possess as they engage in the learning process?

Some of the advantages in the use of the Question Analysis Matrix listed include: its use as a needs assessment exercise; as a planning tool; to establish the focus of curriculum evaluation and lastly, as a comprehensive program implementation plan.

Hord, S. & Hurling-Austin, L. (1986) Effective curriculum implementation: Some promising new insights. The Elementary School Journal, Vol. 87(1), 97-115.

This paper reports on the Principal-Teacher Interaction (TPI) study, a one-year study of nine elementary school principals involved with teachers in curriculum implementation. Two key questions covered what principals and others do in the process of facilitating change and what effects their interventions have on the implementation of specific programmes.

The study involved three elementary schools in each of three districts in the US. In the California district it was the first year of an experience based writing programme; in Florida it was the second year of an objectives-referenced mathematics programme; in Colorado it was the third year of a discovery science approach to science curriculum.

The principals were trained to identify and describe interventions they and others made. They were contacted by telephone biweekly to collect tape-recorded data on interventions.

The teachers and administrators involved in the project were visited on four occasions. They were interviewed using the Levels of Use (LoU) format, innovation configuration questions were asked and they completed the Stages of Concern (SoC) questionnaire on the four occasions.

The researchers in the study were regularly tested to maintain reliability in coding.

Findings

The teachers in California who had used the writing programme material for one year were mainly at the SoC: Management level. In Florida the teachers had two years experience and their Management level concerns had decreased over the year but Consequence level concerns were still low. In Colorado the science curriculum had been in place for three years and the teachers had started to exhibit Consequence level concerns.

Data on pupils' achievement show that as the teachers increased implementation there was a parallel improvement in student achievement.

The data relating to interventions that promote change show that various types of assistance are required. For example, the development of supportive organisational arrangements, inservice training of teachers, consultation and reinforcement (i.e., "coaching"), monitoring and evaluating the implementation.

The perceived initiator style of the principal was correlated very highly with implementation success of the teachers. However, in each of the schools there were one or two other people who played a major role in supplying implementation interventions (Hord et al., 1984).

The authors conclude by stating their data demonstrate that the second and third years of the implementation of an innovation require as much energy and facilitation time as the first year.

Reference

- Hord, S., Stiegelbauer, S. & Hall, G. (1984) How principals work with other change facilitators. Education and Urban Society, Vol. 17(1), 89-109.

James, R. (1979) Understanding why curriculum innovations succeed or fail. A paper presented at the School Science and Mathematics Association, National Convention, Kansas City, Missouri.

This paper is concerned with the extent to which programmes developed by the National Science Foundation (NSF) have been implemented.

The Stages of Concern (SoC) questionnaire was completed by 307 elementary school teachers involved in team teaching. The teachers reported that with the innovation team teaching SoC: Management concerns were experienced for several years.

The Level of Use (LoU) interview was used with the 307 teachers and 52 per cent of these were at the LoU TVB Routine use. Only 11 per cent of the teachers were above this level.

Jones, N. (1982) An evaluation of the development and implementation of national core curricula in Australian TAFE. The Australian TAFE Teacher, Vol. 14(2), p.15.

Since 1974 there has been a national attempt to recognise, develop and use common curriculum products (e.g., common topics, common objectives, common teaching/learning resources) in TAFE. This brief report, arising from the Conference of TAFE Directors in 1982 which established a team to evaluate the National Core Curricula (NCC), provides an overview of the project. Reasons for supporting a NCC (including achieving standardisation of employee's minimum competencies and more flexible tradespersons; the opportunity to share scarce human and material resources; and the fostering of interstate co-operation and liaison) are outlined.

Evaluation data were collected by use of structured interviews with key stake-holders (including members of the NCC Task force; a sample of lecturers in the curriculum areas; a sample of industry spokespersons; senior curriculum branch officers), a literature review, and reviews of assessments completed.

It was stated that the project would allow for determination of the viability of NCC, an evaluation of the methodology for NCC development and implementation, and whether or not the most effective utilisation of human and material resources to support NCC development and implementation.

Kimpston, R.D. (1985) Curriculum fidelity and the implementation tasks employed by teachers: A research study. Journal of Curriculum Studies, Vol. 17(2), 185-195.

Kimpston summarises the Rand Studies of Berman and McLaughlin (1976) study by stating that adoption of the curricula or programmes was a central issue. Similarly, in summarising Loucks and Lieberman (1983) he asserts that little is known about what should be done to successfully implement new curricula.

This article is concerned to explore the link that Kimpston says has not been treated adequately; that is, the teachers' beliefs about their roles in the curriculum development and implementation process.

More specifically, Kimpston says that what has not been investigated as the connection between active teacher participation in the curriculum development process and the degree of fidelity with which these teachers implement the new curricula. This framework was used to develop an empirical study in which the independent variable, teacher beliefs, was explored in terms of (i) perceived importance, (ii) desired participation, and (iii) actual involvement in curriculum implementation tasks. The dependent variable was fidelity of implementation.

The Study

The study was conducted in a large US suburban school district. The district was selected for its clearly defined curriculum for grades K-12. The language arts area was chosen for investigation and 53 elementary teachers, 13 junior high and 8 senior high teachers were involved.

Two questionnaires (The Objective Implementation Assessment and Curriculum Implementation System Assessment) and a form for conducting a structured interview were developed. The questionnaires were administered at the same time and stratified sample (2 teachers from each school sector) was interviewed.

The Results

The data showed: (i) those teachers who closely followed the prespecified curriculum attached greater importance to implementation tasks and their involvement with them. For primary teachers the instructional and evaluation tasks were perceived as more important, for senior high teachers, the evaluation tasks were seen as more important; (ii) while fidelity was low at all grade levels, there was a declining fidelity of the curriculum at the higher grade levels.

References

- Berman, P. & McLaughlin, M. (1974-78) Federal Programs Supporting Educational Change, Volumes I-VIII. Santa Monica, California: Rand Corporation.
- Loucks, S. & Lieberman, A. (1983) Curriculum Implementation. In F. English (Ed.) Fundamental Curriculum Decisions. Virginia: Association for Supervision and Curriculum Development.
- Kimpston, R.D., Barber, D., & Rogers, K. (1984) The Program Audit. Educational Leadership, Vol. 41(8), 50-60.

The issues of declining enrolments, increased operating costs and falling revenues, etc. are referred to as reasons why quality curricula are increasingly harder to maintain. The paper sets out to answer the question of how in a situation of shrinking resources a district can monitor its curriculum and hence maintain quality, over an extended period. Following discussion with curriculum leaders, it was decided that subject area curricula would be reviewed and evaluated every seven years. To provide for intermediary checks on fidelity of curriculum implementation the addition of a program audit in the fifth year was agreed.

The main focus was to monitor how closely the teachers were implementing the objectives specified in the curriculum and how much emphasis teachers gave to specified objectives.

A number of instruments were designed to measure the discrepancy between actual and specified implementation of the objectives. One, for example, was a six-option Likert scale which was checked by the teacher to report the emphasis placed on each objective. The data were tabulated to allow easy recognition of discrepancy between actual and specified emphases.

Teachers' attitudes to specific curriculum tasks that were important during implementation were ascertained using an instrument that sought responses to 28 generic tasks. The comparative mean-score responses of teachers for each task for "perceived importance", "desired participation" and "actual involvement" were graphed.

The differences between each of the responses are used in a diagnostic manner, e.g., when "perceived importance" was rated significantly higher for a task than "actual involvement" it was interpreted to mean that the teachers were calling attention to constraints on their ability to implement the curriculum.

Interviews were used to provide further information about issues brought to the attention of the program auditor from the questionnaires.

It was stated the local Board of Education intends to compare the results of the program audits from year to year to identify problems and suggest long-range plans for instructional improvement.

Kinnear, A. (1981) Implementation of a school-based science programme: A case study. Australian Journal of Teacher Education, Vol. 6(1), 37-69

This paper reports on the development and implementation of school-based science programme for a primary school.

The project had three aims: (i) to introduce materials-based inquiry programmes in four conceptual areas, with integration of these across grade levels; (ii) to provide the school with the materials and specialist-assistance needed to implement the programmes; (iii) to develop confidence in and expertise of teachers implementing their science programmes.

The school (non-government) involved in the project had approximately two hundred students across the seven primary grades. It was located in a low socio-economic status area. The teaching staff comprises 9 teachers and a non-teaching principal.

The school-based science programme had three parts. First, a flexible framework (a topic/skills matrix) within which each teacher would choose what to teach. Second, a planned sequence of topics across the 7 grade levels on the themes of Weather, Animals and Plants. Third, activities which met "a need for actual visits and experience with practical science in the community". (Griffith, 1977, p.11.) (That is, visits to museums, nature reserves, observing industrial and chemical processes such as power production, flour manufacture, etc.)

The progress of implementation was monitored through questionnaires (four over the two years of the study) and a diary of week-to-week observations and other anecdotal information.

The report of the implementation is described as a three-stage process. The first was the initiation stage in which the teachers made their first attempt to implement their science programmes. The second stage was when regular science lessons began. The third stage was when regular science lessons were maintained over a range of subject areas.

Results

In the first year of the project, all but one teacher solved the initiating problems sufficiently so that science lessons could begin on a regular basis. By the end of the first year, five of the teachers had reached the third stage, i.e., maintaining regular (with varying frequencies) science lessons. In the second year, the majority of teachers reported that they were more confident and more science material was covered.

Summary

The author reported that the programmes were perceived to be over-ambitious, not all teachers were committed to them and teacher mobility meant that teachers newly appointed to the school were not attuned to the aims/needs of the programmes. There was insufficient opportunity for teacher-development, the principal was unsympathetic to the aims and needs of the project. More positively the author states that the programme was school-based, the majority of the teachers saw a need for the programme and were committed to it, resources were provided, a consultant was available to use as the teachers saw fit, and at least initially, a favourable climate for change existed within the school.

Reference

Griffith, S. (1977) Consultant-stimulated comprehensive science programme - Rationale. Submission to the Western Australian Schools Commission.

Knupfer, N.N. (1986) Implementation of microcomputers into the current K-12 curriculum: A critical discussion of issues. University of Wisconsin-Madison, Mimeograph.

The author asserts that "plans for computer education should not focus on the computer as the object of study, but should focus on applications using the computer as an extension of the normal teaching technique or in classroom activities that cannot be accomplished through traditional instruction".

This article surveys the current uses of computers, advances some generalisations based on the review, suggests limitations and aspirations for the future and outlines the implications for curriculum and instruction.

The author concludes that the flexibility of microcomputers allows the learner to control the pace of the lesson, frees the teacher to give more individual attention to those pupils who need it, and reinforces learning immediately.

Issues seen as inhibiting implementation include: ingrained resistance to innovation, poor quality software, teachers who do not possess the knowledge to evaluate software, lack of resources, etc.

The author argues that in elementary schools computers should be incorporated into the curriculum rather than determine its nature and direction. However, the lack of teacher training and inservice in the area makes it difficult for this to occur. Similarly, she asserts that student use of the computer for short periods (e.g., half an hour each day) rather than in larger blocks of time hampers the development of skills, interest, etc.

The author says that students entering high school should be familiar with software, some programming techniques and interfacing applications.

The paper concludes with the assertion that an evolutionary approach to curriculum development plus an incremental implementation is needed rather than imposing a preconceived notion on where computers should fit in the schools.

LaPorte, J. (1986) The teacher's role in curriculum change.
Vocational Education Journal, Vol. 61(5), August, 25-26.

The author highlights the central role of the teacher in curriculum change. He suggests there are a number of basic strategies teachers should follow: (i) thoroughly understand the new curriculum; (ii) make the change gradually; (iii) establish communications; (iv) establish a user support group; and (v) observe another teacher implementing the new curriculum.

Leary, J. (1983) The effectiveness of concerns-based staff development in facilitating curriculum implementation. A paper presented at the Annual Conference of the American Educational Research Association, Montreal, Canada.

The article reports year one of a three-year curriculum implementation effort which is focussed on facilitating curriculum implementation through diagnostic-prescriptive staff development. The Concerns-Based Adoption Model (CBAM) is used.

The study involved 12 kindergarten to Grade 6 generalist teachers in an isolated Native elementary school in Northern Canada who were using the K-6 Provincial Science Curriculum.

The objective of the study was to determine how teacher Stages of Concern (SoC) were related to curriculum innovation; teacher Levels of Use (LoU) of the innovation; and Configuration of Use of the innovation.

The study conclusions were (i) that staff development targetted by Stages of Concerns, Levels of Use and Innovation Configuration data can predictably affect User Stages of Concern, Levels of Use and Innovation Configuration, and (ii) that Stages of Concern did not change as a function of time, but did change as a function of staff development.

Reference

Hall, G. & Loucks, S. (1978) Innovation configuration: Analyzing the adaptations of innovations. Austin: Research and Development. Centre for Teacher Education, University of Texas.

Leithwood, K. & Deborah, M. (1980) Evaluating program implementation. Evaluation Review, Vol. 4(2), 193-214.

The article outlines procedures for evaluating the nature and degree of implementation of school curriculum innovations within formal educational settings.

The authors describe a four step methodology for evaluation program implementation innovation: (i) identifying descriptive dimensions; (ii) specifying practices implied by the innovation; (iii) describing actual practices; and (iv) comparing actual with intended practices across the critical dimensions of beliefs, objectives, instructional materials, and teaching strategies.

The article reports on the data collected from a twenty-minute interview with 19 grade 4 teachers within one Ontario school system. The data enabled a User Profile for individual teachers to be developed and identified dimensions of the innovation most and least problematic to implementation.

Loucks, S. & Hall, G. (1979) Implementing innovations in schools: A concerns-based approach. A paper presented at the Annual Meeting of the American Educational Research Association, San Francisco.

This early paper describes the Concerns-Based Adoption Model (CBAM) and its concern to view the teacher as the focal point in school improvement efforts while acknowledging the social and organisational influences.

The paper describes a two-year longitudinal study (1974-1976) to develop and validate the CBAM materials and their use in eighty elementary schools in Colorado during 1976-1978. The key role both at strategic and practical levels of teacher inservice sessions and training workshops in the implementation study are stressed.

The authors conclude that the implementation of an innovation takes more than one year, the Stages of Concern (SoC) and Levels of Use (LoU) are useful tools to guide and monitor a change effort and the principal is a key component in the implementation.

Loucks, S. & Melle, M. (1980) Implementation of a district-wide science curriculum: The effects of a three year effort. University of Texas, Austin: Research and Development Centre for Teacher Education.

The paper, one of a series, describes a collaborative educational change effort involving the public schools of Jefferson County, Colorado, which has an enrolment of approximately 80,000 students, and the Texas Research and Development Centre.

The paper describes (i) a successful change effort that was designed to implement what is generally known about successful change, and (ii) reports the effects of the change on schools, teachers and students.

The study involved a representative sample of teachers who were monitored for three years to determine the effect of implementation of their concerns and their use of the curriculum.

The paper describes the project design, reports the effects of the implementation on teachers' stages of concern (SoC), levels of use (LoU) and their use of curriculum-specific components in the classroom. There are interesting implications drawn from the study through the presentation of a dialogue between the researcher and practitioner.

Marsh, C. (1984) Implementation of a curriculum innovation in Australian schools. Knowledge: Creation, Diffusion, Utilisation, Vol. 6(1), 37-58.

This paper is an extension of another paper (Marsh, 1985). It is concerned to use the Rogers' (1983) model to explain the contextual elements of implementation and Hall et al. (1973) Concerns-Based Model to consider the specific implementation factors operating for secondary school geography teachers.

The study addressed the following questions:

- i) how is the geography syllabus being used by geography teachers, as measured by Level of Use (LoU) data?
- ii) does the preparation of teachers at each LoU level vary between state education department schools and non-state education department schools?
- iii) what are the major concerns expressed by the geography teachers using the new syllabus?
- iv) does the proportion of teachers at each Stage of Concern (SoC) level vary between state education department schools and non-state education department schools?
- v) what are the particular concerns for users at each of the SoC stages?

The article describes the West Australian Education System and highlights the domination of the final two years of secondary school (Years 11 and 12) by an external examination. The examination group, via official committees, is described as playing a dominant role in introducing and monitoring the new syllabus.

A sample of 44 state education department geography teachers (27 per cent of the total) and a sample of 15 non-state education department secondary teachers (28 per cent of the total) were contacted during 1982. Over a period of three visits to each teacher, data were collected on their Stages of Concern (SoC) and Level of Use (LoU).

Results

As all geography teachers in Western Australia are required to teach the syllabus the non-user levels (0 to II) do not apply. The data showed 25 per cent of state education department and 27 per cent of non-state education department teachers at Level of Use III: Mechanical Use.

The majority of respondents (59 per cent state education department, 67 per cent non-state education department) were assessed at Level of Use IVA: Routine. Eleven per cent of state teachers and 6 per cent of non-state teachers were assessed at Level of Use IVB: Refinement and at Level V:

Integration there were 5 per cent of state teachers and no non-state teachers.

The author suggests that the external context is so dominant in the Western Australia situation that teachers have little motivation to experiment with change of any kind.

Overall there were similarities between the teaching Level of Use of state education teachers and their non-state colleagues. The role of the external examination in this is highlighted. The data from the SoC questionnaire also show similar response patterns.

The author concludes by stressing that inservice programmes should be developed for the teachers.

References

Marsh, C. (1985) Implementation of a high school geography syllabus: Issues and applications. Educational Research, Vol. 27(1), 30-39.

Rogers, E. (1983) Diffusion of Innovations. New York: Free Press.

Marsh, C. (1985) Implementation of a high school geography syllabus: Issues and applications. Educational Research, Vol.27(1), 30-39.

This paper uses the implementation models of Rogers and Shoemaker (1971) and the Hall et al. (1973) Concerns-Based Model to explain contextual and process factors associated with the implementation of a high school geography syllabus in Western Australia.

A sample of 44 senior school geography teachers, representing 27 per cent of those involved in teaching the geography syllabus, were selected. The teachers were visited on three occasions. On the first visit the researcher introduced the topic and explained the purpose of the research. On the second visit the researcher interviewed the teacher about their current use of the geography syllabus using the Level of Use (LoU) interview technique. In addition, the Stages of Concern (SoC) questionnaires were explained to the teacher and arrangements made to collect it at the time of the third and final visit.

The majority of the teachers (59 per cent) were assessed at Level of Use IVA: Routine. Very few teachers (11 per cent) were at Level of Use IVB and even less at Level of Use V: Integration (5 per cent).

The overall SoCs show peaks at Stage 1 (Informational) and Stage 6 (Refocussing). The other stages all show moderate to high concerns.

The author argues that the data on this study support the Authority Innovation-Decision Making Model. The role of the head office personnel, the professional geography teachers association and the external examination requirements are seen as major reasons for the rapid implementation of the new geography syllabus.

References

Hall, G., Wallace, B. and Dossertt, B. A developmental conceptualisation of the adoptive process within educational institutions. Unpublished paper. University of Texas.

Rogers, E. and Shoemaker, F. (1971) Communications and Innovations: A cross-cultural approach. New York: Free Press.

Marsh, C. (1986) Curriculum implementation: An analysis of Australian research studies-1973-1983. Curriculum Perspectives, Vol. 6(1), 11-21.

This major review of Australian curriculum implementation studies brings together material from 10 articles/reports and 20 postgraduate theses.

The main methodology used in the 30 publications reviewed was the case study approach. There were a very small number of surveys or combined survey/case studies.

Of the 30 studies there was only one conducted at the non-primary or secondary sector level. The majority related to Science and Social Studies curriculum areas or to the school based curriculum development (SBCD) process.

Marsh focuses upon the two issues of (i) survey studies versus case studies and (ii) studies which measure fidelity of use versus studies which measure adaptation processes. These issues are illustrated by reference to eight of the studies.

The eight studies covered: the "operational curricula" in primary schools located in North-west New South Wales; the introduction of a new senior school Physical Science curriculum, in Western Australia; two innovations in a high school in Tasmania; the decision-making activities in a school committed to a school-based decision making approach; the implementation of the Social Education Materials Project (SEMP) unit on family in Victoria; the implementation of

multicultural materials in Western Australia; the use of Concerns Based Adoption Model (CBAM) materials to trace the teachers' concerns following an objectives based maths course in a Melbourne metropolitan primary school; the implementation of a new Year 8-10 Home Economics curriculum in Western Australia.

The author asserts that the range and type of implementation studies undertaken in Australia over the period 1973-83 mirror those in the USA. The issue of fidelity has been important as, typically, State Education authorities have developed centrally Curriculum guides and materials. Marsh sees moves to increase accountability leading to more concern on fidelity of use of curricula.

The paper concludes by noting (i) that there are no large scale, multi-site studies of curriculum implementation in Australia, (ii) that there are few studies undertaken by state education systems with a view to facilitating major decisions about curriculum use, and (iii) that the studies reviewed have not produced any conceptual or methodological breakthroughs in their studies of curriculum implementation.

Marsh, C. (1987) Implementation of a social studies curriculum in an Australian elementary school. The Elementary School Journal, Vol. 87(4), 475-486.

Marsh begins this paper by asserting that in curriculum development projects a disproportionately small amount of attention has been paid to the implementation phase.

The author highlights the multidimensional and multi-level aspects of implementation (Fullan & Pomfret, 1977; Leithwood & Montgomery, 1980). He observes that, within this framework, an implementation period for most teachers can last 2-4 years on a continuum that spans initiation, implementation and institutionalisation.

This study examines the level of implementation of a new social studies curriculum by 10 teachers at a metropolitan elementary school over one year. The study was concerned with the fidelity of use of a centrally developed curriculum.

The questions the author wished to answer were: (i) what are the concerns of teachers in this elementary school about implementing the curriculum?; (ii) how competent are teachers in their attempts to implement the curriculum?; (iii) over a teaching year do teachers vary their implementation of the curriculum?; (iv) what are the implications from this school for other elementary school which are implementing curricula? The 10 (out of 14) teachers in the school who taught social studies agreed to participate. The teachers completed the

Stages of Concern (SoC) questionnaire in the second teaching month. A second round of Stages of Concern (SoC) questionnaires and Level of Use (LoU) interviews were conducted in the sixth school month.

The data show Personal concerns were the most common. Most of the teachers had moved to use the centrally produced teacher's guides as the main source of information about approach and content. For example, one teacher reported "the teacher's handbook is almost my bible now".

While there was a lowering of concerns by the teachers by Period 2, the concerns were still very high. The reasons given by the teachers for this pattern of response include heavy day-to-day pressures and a feeling of little ownership of the curriculum.

The author points to the difficulty of using a fidelity perspective in a situation where specific configurations of what is desired are not provided.

As a consequence, the author notes that it is not unexpected that teachers did not make significant advances in their respective levels of implementation of the new curriculum.

References

- Fullan, M. & Pomfret, A. (1977) Research on curriculum and instructional implementation. Review of Educational Research, Vol. 47(1), 335-397.
- Leithwood, K. & Montgomery, D. (1980) Evaluating programme implementation. Educational Quarterly, Vol. 4(2), 193-214.
- Marsh, C. & Hill, P. (1984) Implementation of a syllabus innovation in Western Australia. Studies in Educational Evaluation, Vol. 10, 135-147.

This article reports on the implementation of a geography syllabus in Western Australia between 1976 and 1980. The original study was undertaken in 1976 and involved a questionnaire being sent to all (N=163) geography teachers in State Government high schools in Western Australia. The follow-up study, undertaken in 1980, used the same questionnaire and again was sent to all state school geography teachers. The response rate in 1976 was 63 per cent and in 1980, 56 per cent.

Responses to the questionnaires showed that the teachers were using teacher-centred, didactic methods rather than student initiated inquiry or fieldwork.

The teachers in the 1980 survey were not as enthusiastic about the flexibility and the freedom of the syllabus as were the teachers surveyed in 1976 (37% down from 68%). A lower level of subject matter integration with practical fieldwork was also evident in the 1980 survey results.

A semantic differential was incorporated into the questionnaire to ascertain the attitudes of geography teachers to the Tertiary Admission Examination (i.e., Year 12) syllabus. The teaching of physical geography was perceived as a problem by the teachers.

The authors conclude that the teaching of certain higher order concepts and the overall inquiry mode of teaching as intended by the syllabus developers is not occurring.

McCombs, B. (1986) The instructional systems development (ISD) model: A review of those factors critical to its successful implementation. Educational Communication and Technology Journal, Vol. 34(2), 67-87.

This paper is the thirteenth ERIC/ECTJ Annual Review Paper. The Instructional Systems Development (ISD) Model is concerned with the development and management of both instructional materials and instructional systems. Analytical and problem solving skills are emphasised. The steps in the ISD process, it is argued, provide a "check-list" against which progress can be assessed.

The author states that the relative events of various ISD Models have been reviewed recently (Gustafson, 1982).

The paper is concerned with exploring the factors leading to the successful implementation of the ISD Model and to derive implications for the design of an ISD users' training programme.

The roots of ISD are traced to the fields of psychology and communication with foundations in learning theory, systems engineering, instructional technology and empirical research (Earle, 1985).

A generic 10 step ISD model is proposed and the logical flow of the steps in a systematic problem-solving process is emphasised.

The role of the US military in the development of the area is discussed. The loss of support from some advocates is traced to the difficulties which emerged in the area of "self-pacing". This, it is suggested, is due in part to the equating of ISD with individualisation and self-pacing.

The implementation problems of ISD are referred to in terms of being long on "what to do" but short on "how to do it" (Montague, Ellis & Wulfeck, 1983). This concern has lead some writers to conclude that successful implementation of ISD is an art or craft rather than a science. Similarly, there is some concern that the trend has been to "overproceduralise" the process when tasks require higher order thinking and problem-solving skills (e.g., task analysis).

The successful ISD implementation occurred where there were strong management support for the innovation, a balance between mediated and print materials as well as individual and group activities, high instructor dedication and motivation and adequate resources.

The author states that types of skills required for effective ISD applications include the higher order reasoning and problem-solving skills in addition to specific skills such as defining objectives or writing criterion measures.

References

- Earle, R. (1985) Teachers as instructional developers. Educational Technology, Vol. 25(8), 15-18.
- Gustafson, K. (1982) Survey of instructional development models: ERIC information analysis product. Syracuse, NY: ERIC Clearing-house on Information Resources.
- Montague, W., Ellis, J. & Wulfeck, W. (1983) The instructional quality inventory (IQI): A formative evaluation tool for systems development (NPRDC-TR-83-21). San Diego, CA: Navy Personnel Research and Development Centre.
- Mitchell, J. & Traill, R. (1986) Making curriculum implementation a reality. Curriculum Perspectives, Vol. 6(1), 23-27.

This paper reports an Australian study concerned to gauge the impact of a set of curriculum materials on secondary school.

The curriculum materials related to a kit with the title "Electing Australia's Federal Parliament" (1980). A copy of this kit was sent to all Australian secondary schools and it comprised four booklets detailing Australia's electoral procedures, a set of slides, wall charts, maps and copies of other documents.

The project commenced in response to disappointing sales of the kit material and the Electoral Commission decided to revise it to better meet users' requirements.

Data Gathering

In 1984 the researchers sent a questionnaire to every Government and non-government secondary school in Australia and then conducted case studies from 24 schools were undertaken. In addition, the kit material was analysed to determine the validity and accuracy of the content, that the material were at an appropriate level of difficulty for the target student group and that the concepts used in them covered key ideas on electoral procedures.

Findings

Questionnaire

1219 schools or 50 per cent of the total secondary schools in Australia responded to the survey. Of these, approximately 500 said they could not locate the materials in their school. While the materials had been developed for the 14-16 year old student population the greatest use of it was made by the students in the 16-18 year range.

Case Studies

Most teachers used the materials as a teacher reference source rather than a class resource for student use. Teachers reported that reproducible master sheets and supplementary audiovisual materials would enable them to make greater use of the kit.

The students were concerned about the level of the written materials and suggested that audiovisual material should supplement the text. In particular that a videotape illustrating concepts with contemporary examples was necessary.

Conclusion

The authors used this evaluation exercise to argue that producing and distributing materials, without an in-depth analysis of the content area and the target audience, careful planning of the format of the materials, trailing of materials, and in-service courses, will lead to failure.

Reference

Australian Electoral Commission and the Curriculum Development Centre. (1980) Electing Australia's Federal Parliament. Canberra, Australia: Curriculum Development Centre.

Morris, P. (1984) Curriculum innovation and implementation: A South-East Asian perspective. Curriculum Perspectives, Vol. 4(1), 43-47.

The author states that curriculum innovations developed in the USA and the UK have been imported directly to the educational systems of Malaysia, South Korea, Sri Lanka and Hong Kong. This strategy has been possible because of the highly centralised educational systems in these Asian and South East Asian countries.

The author quotes researchers (e.g., Klein and Eshel, 1980; Lewin, 1981) who report that imported innovations have a facade of change but little impact on classroom processes. This article is concerned to explore how an imported curriculum innovation was implemented in Hong Kong secondary schools.

The innovation was the introduction of a "new" approach to teaching economics at the Form IV-V level. The official syllabus recommended the use of four specific teaching strategies: role playing and simulation exercises, problem solving exercises, tutorials and seminars and individualised instruction. However, there were no attempts to provide appropriate resources or induct teachers into the use of the new teaching strategies.

Fifty-six lessons were observed and an observation instrument used to categorise the classroom processes.

The main characteristics of the observed lessons were very similar -- teachers spent most of the time lecturing and the students noted the information presented.

When the teachers set tasks to be done by the students these required only that the students recall information presented to them by the teachers.

Conclusion

The author states that in the lessons observed there was no congruence between the goals/aims of the new curriculum and what occurred; there was a "facade of change". He argues that projects developed in western nations should be assessed critically to determine if their expectations are practicable in another context. Finally, that if innovations are to have any chance of success that they should involve appropriate resources and in-service training.

References

- Klein, Z. & Eshel, E. (1980) The open classroom in cross cultural perspective: A research note. Sociology of Education, Vol. 53, April, 121-144.

Lewin, K.M. (1981) Science education in Malaysia and Sri Lanka. Curriculum development and course evaluation 1970-1978. Unpublished D.Phil thesis, University of Sussex.

National School Boards Association. (1981) The School Board and the Instructional Program. (Research Report 1981-82) Washington, D.C.

This research report is concerned with the role school boards play in influencing the instructional program. It describes what influence boards have, how much influence they may want to have and what current educational writers say they should have on developing the instructional program.

In 1981 a six-page questionnaire was mailed to 3,000 school board members across the US. Completed questionnaires were returned by 810 board members (i.e., a 27 percent response rate). The largest number of responses came from small towns with student enrolments of less than 1,000. Nearly half of the responding districts had decreasing student enrolments.

Data from the questionnaires show "career education" was the number one instructional concern of school boards. This was taken to mean that school boards are more interested in a "back to basics" education rather than so-called "frill" areas.

Approximately two-thirds of the respondents indicated that they have policies for the evaluation of the instructional program. In practical terms this means that reports of test results, studies conducted by staff members or consultants, personal observation, etc. are used to evaluate what is implemented.

Nelson, G., Poehler, D. & Johnson, L. (1988) Implementation of the teenage health teaching models: A case study. Health Education, Vol.19 (3), 14-18.

This exploratory study sought to identify variables associated with implementation of the 16 Teenage Health Teaching Modules (THTM).

46 teachers and administrators from 33 junior and senior high schools in 11 Alabama school districts participated in the THTM inservice training. A 5-day training workshop introduced

participants to the modules and recommended instructional strategies for them including role playing, brain-storming, mini-lectures, and group discussions.

The study reported that approximately 60 per cent of the THTM modules were used during the first year by participating teachers (33½ of the 46 that attended the training) following the in-service teacher training. The best single predictor of curriculum implementation was the teacher's evaluation of in-service training specific to the THTM modules. Other variables which appeared in combination to be associated with curriculum implementation included teacher health knowledge, years of teaching experience, and the teacher's evaluation of the curriculum.

The authors recommend paying greater attention to the components of teacher in-service training in such areas as planning and delivery.

Parkinson, K.L. & Broderick, J. (1988) An evaluation of national core curricula in Australia: Summary report. Adelaide: TAFE National Centre for Research and Development

The TAFE National Centre for Research and Development is a major sponsor of curriculum projects. In 1986 it decided to undertake a project to evaluate the implementation of national core curricula (NCC).

Among the aims of the project were:

- i) to consider and to compare the range of alternative approaches to NCC development;
- ii) for selected NCC, to evaluate the extent of the implementation of NCC in all states/territories; and
- iii) to evaluate the benefits to students and to teachers of NCC.

Data was collected from document analysis, structured interviews and several case studies. The interviews were conducted with members of the Curriculum Projects Steering Committee and were intended to obtain information on the knowledge of respondents of national curriculum projects (including NCC), and the degree to which the curricula had been implemented.

A questionnaire was used as the major data gathering approach in the three case studies.

The case study questionnaire was administered to TAFE officers involved in the development of/or implementation of the NCC in automotive mechanics basic trade course, sheet-metal work basic trade course and real estate courses and to members of the Curriculum Projects Steering Group.

Findings

The report concluded, inter alia: the research, development and diffusion model of curriculum design, which is commonly used in NCC development, did not enhance the degree of fidelity in their implementation; that the most positive effect of NCC on standards should be the improvement in the quality of learning materials. This benefit, however, was not necessarily provided for students; the techniques of curriculum development used by task forces tended to be those which apply to established vocations with relatively homogeneous work forces.

The principal benefits to students and graduates of NCC were improved mobility and greater acceptance by various state/territory registration authorities.

The main benefit to staff of NCC was increased professional development through the broadening of understanding of curriculum processes and the exchange of ideas.

Recommendations

The report concluded with a number of recommendations. For example, that the use of a standard form of documentation together with a statement of student outcomes and learning materials would overcome the disadvantages of the research, development and diffusion model of curriculum design; that implementation of NCC should be monitored in such a way that the individual TAFE authorities' responsibilities are reinforced.

Pena, A. (1986) Implementation procedures in bilingual education: The difference between success and failure. A paper presented at the Conference of the National Association for Bilingual Education, Chicago.

This paper argues that while bilingual education in the US is perceived to be a "failure" by many social commentators and researchers that, in fact, this is because the bilingual programmes have not been implemented.

The author, who was national director of Title VII, the Bilingual Education Act (1971), argues that while projects were funded there were many school districts which only paid lip service to the requirements for putting the programmes

into operation. In addition, the bilingual programmes were implemented within a framework which saw the innovation as just an "add-on" or a "special programme" and thus totally incompatible with the rest of the curriculum.

Poole, M. & Okeafor, K. (1989) The effects of teacher efficacy and interactions among educators on curriculum implementation. Journal of Curriculum and Supervision, Vol.4(2), 146-161.

This study sought to examine the effects of several school-level variables on the implementation of a changed curriculum.

The study used Fullan's (1982) conceptual framework for investigating the implementation of educational change (i.e., it examined factors such as the role of the principal, the quality and frequency of collegial interactions among educators, and the teachers' sense of efficacy or belief that they have the skills required to help all students.)

The three school-level factors examined in the study were the effects of task-relevant interactions between teachers and administrators, teachers' sense of teaching efficacy, and task-relevant interactions between teachers on the use of an innovative curriculum.

The study involved a sample of 220 teachers randomly selected and stratified by grade level (62 teachers per grade for 1st, 2nd and 3rd grades and 34 kindergarten teachers). A total of 140 teachers or 63.6 per cent responded to a mail questionnaire survey. Data from 125 responses (57% of the population) were eventually used in the study.

The results were consistent with Fullan's model of change implementation in that the new curriculum was only partially implemented in the first year. Other findings were:

- i) teaching efficacy alone did not account for teacher variability in implementing a new curriculum. Other factors such as classroom and school climates, the change being implemented, and the teacher's personality were also seen as important.
- ii) teachers reporting more frequent task-relevant interactions with other teachers obtained higher levels of implementation than teachers reporting less frequent task-relevant interactions.
- iii) teacher-administrator task-relevant communication did not contribute to curriculum implementation.

- iv) a statistically significant interaction was found between teachers' efficacy and interactions among teachers.
- v) teachers exhibiting higher efficacy and lower task-relevant interactions showed significantly lower implementation levels.

Reference

Fullan, M. (1982) The meaning of educational change. New York: Teachers College Press.

Roessler, T. (1988) Implementing career education: Barriers and potential solutions. Career Development Quarterly, Vol.37(1), 22-30.

The article seeks to examine the current status of career education both in terms of barriers to its implementation and potential curriculum model and as related to the needs of disabled youth. Two curriculum models, Life-Centred Education and Employability Enhancement Strategies are discussed.

The author argues that there are three criteria to be met for any career education programme: (i) it must be a functional curriculum; (ii) it should stress an integrated learning environment; and (iii) there should be community-based service delivery.

Five barriers to the implementation of career education were identified in the article:

- i) assessment - i.e., lack of measures to assess the career educational needs and vocational potential of students with disabilities.
- ii) planning - i.e., shortcomings in planning strategies.
- iii) curriculum materials - i.e., lack of sequential career educational materials.
- iv) generalizations and maintenance - i.e., too few settings in the community in which students can practice the career education skills they have learned in the classroom.
- v) system commitments - i.e., lack of parental involvement; administrative support in schools, community and local businesses; legislative incentives and mandates promoting career education goals.

The author argues that these barriers can be overcome by introducing a functional evaluation that indicate a student's

status on daily living, and personal/social and vocational competencies in addition to reliable and valid measures that prescribe both academic and career education objectives and activities. The relevance of the curriculum can be improved by determining the demands of local jobs and ensuring that school preparation is consistent with those demands. Linking vocational preparation in school and community classroom settings with placement in competitive employment was an essential activity.

Saunders, M. (1982) Productive activity in the curriculum: changing the literate bias of secondary schools in Tanzania. British Journal of Sociology of Education, Vol. 3(1), 39-55.

This paper is concerned to explore the linkage of theory and practice in Tanzanian secondary schools. This is done through a consideration of President Nyerere's 1967 document entitled "Education for self reliance".

The paper points to the redefinition of the relationship between the dominant literate curriculum and the productive (e.g., the school as a farm or workshop), or essentially practical projects carried out by the schools.

The author reports that while many schools tried to redefine curriculum practice in this way and there has developed an assessment system which included elements not based on literate skills, it appears that productive work has remained disassociated from academic teaching and learning. Among the reasons advanced for this are (i) the use of the literate curriculum as a "means of assessment and distribution" of students to various jobs, and (ii) to the teachers' personal aspirations.

Smallacombe, R. (1982) The role of the Curriculum Directorate Advisers in the implementation of "Into the 80s our schools and their purposes". Society for Mass Media and Resource Technology Journal, Vol. 12(2), 18-22.

This paper was delivered at a Conference in South Australia following the release of the Education Department document "Our schools and their purposes: Into the 80s".

The author was at pains to emphasise that the changes outlined in the document were not to be seen as solely a top-down

development. He stressed the need to ensure that implementation activities were co-ordinated in schools and regions at a pace they felt comfortable with and within the framework of the local conditions.

The author urged his colleagues to establish a "partnership with teachers" and to see as an important goal the establishment of procedures to monitor school programmes.

He re-emphasised the role of the Advisers in the areas of assisting teachers with course content, teaching strategies, use of resources, assessment of student performance and evaluation of programmes.

Reference

Education Department South Australia. (1981) Our schools and their purposes: Into the 80s. Adelaide: Government Printer.

Smorodin, C. (1984) Why teachers implement: An examination of selected variables. A paper presented at the Annual Meeting of the American Educational Research Association, New Orleans

The study set out to investigate how differing amounts of personal contact between teachers and a program coordinator effected the degree of implementation of a curriculum innovation in fifth-grade classrooms.

A sample of 130 fifth-grade teachers were given a 25 item self-report questionnaire. 94 completed the questionnaire (72% of the total) and were returned. 12 members of the sample were also interviewed.

Analysis of the data showed a strong, statistically significant relationship between personal contact with a program coordinator and implementation of the curriculum innovation. That is, the greater the contact the higher the degree of implementation. Teachers with greater contact also have a more favourable opinion about the curriculum and tend to make more use of resources.

Solomon, D. (1988) Strategies for implementing a pluristic curriculum in the social studies. Social Studies, Vol.79 (6), 256-259.

This study examines the concept of cultural pluralism and offers specific examples for implementing the concept through rational strategies in the social science curriculum.

A pluralistic curriculum was defined as "one in which the social, ethnic and gender variety - the American social mosaic - is consistently and appropriately reflected in instructional materials and in all other aspects of social life."

The author argues that teachers implementing the pluristic curriculum must consistently and critically ask higher-order questions about the curriculum and their role in it. It is argued that this can best be achieved through a three stage systematic approach: in Stage I the agenda is set through achievable and desirable goals; In Stage II the curriculum is critically reviewed for bias; In Stage III introspection or critical self-examination as a teaching technique is described.

Stokking, K. (1988) National Educational policy and external support systems as conditions for curriculum implementation. A paper presented at the Annual Meeting of the American Educational Research Association, New Orleans.

This paper begins by noting that in the 1970s evaluation researchers in the area of educational innovation became aware that adoption of an innovation does not necessarily mean that it is implemented (McLaughlin, 1987).

The paper is concerned with the relationship between educational policy and external support, and the strategies and tactics used by policy makers and support agents for implementing curricula innovations.

The author identifies a number of policy instruments which can be used by external agents, including: laws, rules and regulations; financial means; public discussion, legitimisation. Similarly there are numerous functions that can be used to provide support: the development, provision and distribution of products such as curriculum materials, diagnostic instruments and achievement tests, knowledge dissemination, inservice training of teachers, staff development.

The author says that there is now a consensus among researchers about what should be considered relevant factors in the area of policy and support for implementation (Firestone and Wilson, 1982). For example, to show real commitment and optimism; to keep a balance between pressure and support, organise communication, information, planning, and inservice training.

The author uses the Netherlands educational system to illustrate these issues. He refers to the Dutch National Pedagogic Centres which have produced many curriculum materials and describes how the teachers have been inserviced to use these materials.

On the data available he concludes that the policy implementation was not sufficiently thought-out prior to it being utilised.

References

- Firestone, W. & Wilson, B. (1982) Assistance and enforcement as strategies for knowledge transfer and programme reform. Philadelphia: Research for Better Schools.
- McLaughlin, M. (1987) Learning from experience: Lessons from policy implementation. Educational evaluation and policy analysis, Vol. 9(2), 171-178.
- Stubbs, B. (1983) Curriculum support and implementation - from a regional consultant. New Curriculum Directions - Which way for School Libraries? Sydney: Library Association of Australia.

The author argues that without institutional support there can be no implementation.

In this project the role of regional consultants, who were classroom teachers seconded for two to four years, was to facilitate the implementation of Education Department policies. The roles played by regional consultants included that of liaison with central consultants; assisting in the development of policies and support materials; developing inservice courses which clarified policies; providing opportunities for sharing of classroom practices; developing, collecting and disseminating resources; keeping lines of communication open; responding to requests at the regional, school, class or individual teacher level and speaking to or working with parents and community groups.

The author reports that the project won teacher support and raised their awareness about the innovations. The author argues that the processes of policy formulation (advocacy,

discussion, conflict, change and agreement) should be repeated for Senior Staff at the regional level and for school staffs that are involved in translating such centrally developed policies into practice.

Van Der Akker, Jan. L. (1988) The teacher as learner in curriculum implementation. Journal of Curriculum Studies, Vol.20(1), 47-55.

This paper is concerned to show how a careful design of curriculum materials can improve the implementation process and outcomes. He cites Fullan (1985) to illustrate the factors that can influence a teacher's actual use of curriculum documents.

The curriculum development project related to primary science and was sponsored by the Dutch National Institute for Curriculum Development. The characteristics of the curriculum were (i) the integration of elements from various disciplines such as biology, physics and chemistry, and (ii) an emphasis on active forms of learning (especially inquiry learning) and the use of 'hands on' experiences with concrete objects.

In the first years of the project there were a number of small-scale explorations involving intensive interaction between curriculum developers and teachers in a limited number of pilot schools. This material was then used to shape curricula proposals for both the school and the wider educational system.

Conferences and working parties were used to disseminate the materials.

While the materials were being developed the researchers commenced an analysis of the implementation problems in science education. They identified four major issues: (i) there is difficulty in changing teaching strategies, especially when it involves inquiry approaches; (ii) teachers often have a lack of background knowledge and confidence in the subject matter and skills; (iii) the lesson preparation activities are complex and time consuming; (iv) teachers have an unclear view of learning effects on students.

It is in this context that the author says that implementation for the teachers is a process of learning new roles and unlearning old ones. It is argued that the curriculum materials, therefore, should contain a lot of 'procedural specification' and a lot of practical advice on "how-to-do it".

In 1984-85 a field experiment involving two samples of 20 teachers was conducted to compare the transformed material

(experimental version) with the originally published material (control version). Data collection consisted of video-recording and direct observation of lessons, semi-structured interviews and a short questionnaire.

The author reports that the user profile scores were much higher for the experimental group; that the teachers in the experimental group were more successful in creating and maintaining an inquiry approach and that in the experimental groups the students spent about 50 per cent more "time-on-task".

Reference

Fullan, M. (1985) Curriculum Implementation. In T. Husen and T.N. Postlethwaite (Eds.). International Encyclopedia of Education. Oxford: Pergamon Press.

Virgilio, S. & Virgilio, I. (1984) The role of the principal in curriculum implementation. Education, Vol. 104(4), 346-350.

The authors point to the increasing attention on curriculum but assert that most of this has focussed on curriculum development rather than the implementation process.

The role of the principal is highlighted in four stages for curriculum implementation: (i) Change, (ii) Communication, (iii) Staff Development and, (iv) Instructional Planning.

Wargo, D. (1982) User networks to support the implementation of new curriculum products. Florida State Department of Education, Tallahassee Division of Vocational Education.

The paper discusses the importance of user support networks for teachers implementing new curriculum products.

The Dissemination and Diffusion Section, Florida Division of Vocational Education provides the necessary and essential contact and supplies the human and material resources. In planning for creating support networks the Section staff make a number of visits to project participants, conduct impact assessments and/or teacher surveys, develop inservice training, and recruit a task force for planning and coordinating activities and resources needed to support product implementation. A dissemination and diffusion plan is

developed to coordinate all information. The end result is a free-standing support network with emphasis on local-level expertise and resources. Extensive Appendices include: a dissemination and diffusion plan, an awareness packet on the employability skills support network, etc.

Weaver, M. (1988) Using delphi for curriculum development.
Training and Development Journal, Vol. 42(2), February,
18-20.

This brief article describes the use of the Delphi method to generate guidelines for a statistical process control (SPC) training programme. The article outlines an initial Delphi questionnaire and the author describes how the relative importance values suggest the emphases that should be given to the various topics. Similarly, the relative learning difficulty values indicate the amount of time which should be allowed for a given topic.

Winn, W. (1987) Instructional design and intelligent systems:
Shifts in the designer's decision-making role.
Instructional Science, Vol. 16, 59-77.

The author observes that in instructional design decisions about which instructional methods to use typically are made in advance of the implementation of instruction. Whereas in teaching it is highly likely decisions about instructional methods will be made during lesson planning and during the lesson.

The author argues that now in a number of situations instruction is given but there is no teacher present (e.g., self instruction) and a significant proportion of training is provided in the non-formal education context of business, industry and the military. In addition, the newer instructional technologies (e.g., the computer) are characterised by a greater flexibility to adapt to the learner, etc. and, therefore, not all decisions about instruction need to be made in advance. This paper is concerned to look at the implications of this viewpoint for Computer Aided Instruction (CAI).

The author states that instructional designers work as well as they can given the present state of design procedures and instructional theory. On occasions, therefore, instruction while effective is not always optimally so. In this Winn sees

them as similar to teachers who are the "delivers" of the curriculum. He refers to the expert teacher (Berliner, 1986) as using "reflection in action" (Schon, 1983).

Winn explores the issue of whether or not intelligent computer-assisted instruction (ICAI) will be able to select an appropriate method from a repertoire, provided by the designer, in response to the detection of changing conditions. This new approach will require a change in the designer's role away from selecting methods to one involving the development of rules from instructional principles that will allow the system itself to select instructional methods.

Winn suggests that there has been a shift in the locus of decision-making from the design of instruction to its implementation. He argues that if the present trends continue then the development of ICAI will change the teachers role in the classroom.

References

Berliner, D. (1986) In pursuit of the expert pedagogue.
Educational Researcher, Vol. 15(7), 5-13.

Schon, D. (1983) The reflective practitioner: How professionals think in action. New York: Basic Books.

Winner, A.A. (1983) Technology implementation: A case study. A paper presented at the Annual Conference of the New England Educational Research Organisation, Rockport, Maine.

This paper reports a case study of a school which has integrated its computing uses. The United Nations International School (K-12) was concerned to introduce computing into its elementary school. The author reports that computing awareness and interest were initially developed through demonstrations for the staff, student-conducted classroom introductions, etc. After an informal needs assessment the author developed an inservice training programme for the teachers. This programme was a year-long, biweekly series of after-hours workshop sessions, open to all the elementary teachers in the school.

Data on the implementation were collected from participants, outside evaluators and the instructor. The author reports that experimentation on the computers by the participants without prior or parallel knowledge/skills sessions was not the best way to build the teachers' confidence. However, once the teachers became more familiar with use of the computer they requested more machines be made available in or near their classrooms.

After five years the elementary teachers committed themselves to the incorporation of programming into the upper elementary curriculum. LOGO was chosen as the vehicle to achieve the goal.

The author relates the phases described in this case study to the Rogers and Shoemaker (1971) theoretical framework.

Reference

Rogers, E.M. & Shoemaker, F.F. (1971) Communication of innovation. New York: The Freepress.

Wright, R. (1987) Potential effects of teaching reassignment on curriculum implementation. A paper presented at the Annual Meeting of the Canadian Society of Education, Ontario, Canada.

Mobility within a school system is normal and expected. Some of the reasons for moving are career development, to provide job enrichment, and to respond to changing demographic and economic realities. The author asserts that non-voluntary mobility creates serious problems for the organisation and the individual. That, in fact, forced intra-organisational mobility may be equated with job loss and as such can be expected to engender stress and disruption.

Wright argues that while there have been steps taken to assist the individual teacher to develop more positive self-images in this situation that little attention has been given to the impact the forced change will have on curriculum implementation.

She asserts that the teacher moved non-voluntarily will have a lower sense of self-efficacy, decreased self-esteem, decreased satisfaction from the teaching act, a lowered understanding of the curriculum, uncertainty over the role orientation the teacher is expected to play, and a decreased sense of collegiality.

Wright recommends that strategies including the following are used to assist reassigned teachers: individualised instruction of teachers in the pedagogical skills needed in the curriculum, and frequent specific feedback on the performance of the teacher in clearly identified skill and content areas.

Young, M., Hendricks, C. & Hubbart, B. (1986) Teacher training workshops in drug education: Correlates of curriculum implementation. ERIC Document Ed277 673

The aims of this study were to determine: (i) the impact of teacher training workshops in elementary school drug education on actual implementation of drug education programmes, and (ii) whether or not a set of variables could be identified which distinguished between workshop participants who implemented activities and those who did not.

A number of teachers in Arkansas attend a 5-day workshop where they received information about drugs as well as materials and activities for use in their classrooms.

A questionnaire, purporting to come from a research institution, was mailed to the teachers following the workshop. The questionnaire was sent to 324 workshop participants and a total of 195 (60.18%) were completed and returned.

Results indicated that 7 respondents had never implemented any activities, 13 had implemented activities in the past but were not presently doing so, 66 continued to implement a few of the activities and 105 continued to implement a majority of the activities.

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